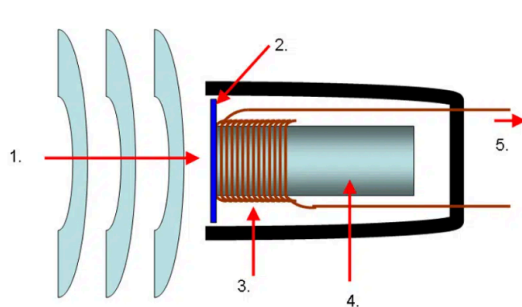


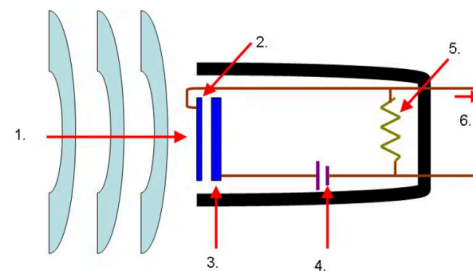
Lesson 8. Microphones

A **dynamic microphone** moves a coil like a “dynamo,” which is a type of gear. Sound waves push the diaphragm, which pushes the coil back and forth along a magnet, creating an electrical current.

A **condenser microphone** uses an electrical charge with the diaphragm placed over a back plate. As the sound waves push the diaphragm closer to the back plate, the current strengthens.



Dynamic microphone: – 1. Sound waves – 2. Membrane – 3. Coil – 4. Magnet – 5. Signal



Condenser Microphone: 1. Sound waves – 2. Diaphragm – 3. Back plate – 4. Battery – 5. Resistor – 6. Signal

However it is produced, the current travels along the cable and can then be routed into a speaker, which works in the opposite way as a microphone, vibrating to create sound waves.

- Dynamic vs. Condenser vs. Ribbon
 - Dynamic mics are cheaper and more durable.
 - Condenser mics are more accurate and provide more warmth.
 - Condenser mics require a power source; this can be delivered through the cable (phantom power) or by an internal battery.
 - Dynamic mics can be placed closer to loud sounds (drums, guitar amps, etc.) are less likely to be damaged by it.
 - Ribbon mics are even more accurate than condenser mics but are fragile and expensive.
- Cardioid vs. Omni-Directional vs. Figure-8
 - A cardioid mic is directional, picking up sound from the front, but not the rear or sides.
 - An omnidirectional mic picks up sound from all directions.
 - A figure-8 mic is bidirectional, picking up sound from the front and back, but not the sides.